

REMARKS

Claims 4-6 are pending in the application, with claims 1-3 having been canceled.

Claims 4-6 have been added in order to more particularly point out, and distinctly claim the subject matter to which the applicant regards as his invention. The Applicant respectfully submits that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **April 23, 2003**.

As to the Examiner's outstanding objection to the Abstract of the Disclosure, as indicated above, the Applicant has deleted the current Abstract, and submit herewith a substitute Abstract of the Disclosure in place therefor.

The Applicant respectfully requests that the substitute Abstract of the Disclosure submitted herewith be approved by the Examiner.

Objections to the Specification

The abstract of the disclosure is objected to because the current abstract submitted by the applicant is 181 words, and that the abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words.

A new abstract is submitted herewith. Reconsideration and withdrawal of this objection are respectfully requested.

Personal Interview

A personal interview was conducted between Examiner Heba Elkassabqi, Primary Examiner Karl Tamai and the Undersigned Attorney. The special attention the Examiners paid to the instant application during the personal interview is noted with appreciation.

During the personal interview, the Undersigned Attorney have made a presentation of independent claim 1 and comments and arguments consistent with this concurrently filed amendment in an attempt to patentably distinguish over the prior art reference Mori et al. The Primary Examiner has indicated that the newly amended claims are patentably distinguished over the asserted prior art references.

Claim Rejections under 35 USC §112

Claim 1 is rejected under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

In the response to argument section of the outstanding Office action, the Office has communicated that there is no assertion of a lack of possession and a lack of enablement problem in the instant application. Therefore, the Applicant need not make any responses to this rejection as the subject matter of this rejection are negated by the same Office action.

Should the Office still anticipates a response, a specific communication as to the subject

matter in which the response is anticipated is respectfully requested.

Claim Rejections under 35 USC §102

Claims 1, 2 and 3 are rejected under 35 USC §102(b) as being anticipated by Applicants

Prior Art.

Claims 1-3 are concurrently canceled herewith, thus rendering any rejection as applied thereto moot. Reconsideration and withdrawal of this rejection are respectfully requested.

Regarding the Office comments based on *Modern Control Systems* by Richard C. Dorf, it is reassuring to the Applicant that the validity of the present invention is affirmed by the noted author. Certainly an alleged invention that contradicts the fundamental principles of an established field would most likely be questionable regarding its enablement. In this regard, all inventions in the established field complies with the same fundamental principles, including all the prior art references cited in Form PTO-892. This fact establishes an understanding that inventions complying with the fundamental principles of the established field should not be perceived as unpatentable; otherwise, all of the cited prior art references in the Form PTO-892 filed after the publication date of *Modern Control Systems* should not have been issued as Letter Patents.

New Claims

New claims 4-6 are added herein by amendment. Independent claim 4 is supported by way of an example in Figure 4, wherein in there is indeed disclosed of a magnetic bearing apparatus (Fig.

4) having a supporting electromagnet capable of generating a magnetic force to support a supported member (1) without contact by the magnetic force generated by supplying a control current(;) to the electromagnet (4) from a power amplifier (7), said apparatus comprising a current sensor for detecting a control current(;) output from power amplifier (7); a displacement sensor (10) for detecting a displacement (I) of the supported member (1); and a magnetic flux (I) or a magnetic flux density (B) estimating means (20) coupled to the current sensor (11) and the displacement sensor (9) to output an estimated value representing a magnetic flux or a magnetic flux density between the supporting electromagnet and the supported member on the basis of a control current detection signal representing the control current (1) from the current sensor (11) and a displacement detection signal (Sg) representing the displacement from the displacement sensor (10), the estimated value being fed from the estimating means (20) back to the power amplifier (7).

These features are not disclosed or taught in the asserted prior art of record. Allowance of independent claim 4 is respectfully requested. All dependent claims, by virtue of inherency, should also be allowed along with independent claim 4.

Response under 37 CFR §1.116
SHINOZAKI, Hiroyuki

U.S. Patent Application Serial No. **09/912,338**
Attorney Docket No. **010953**

Conclusion

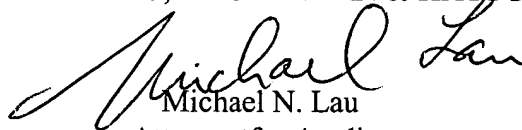
In view of the aforementioned amendments and accompanying remarks, all pending claims are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosed: Substitute Abstract of the Disclosure

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ABSTRACT OF THE DISCLOSURE:

There is provided a magnetic bearing apparatus having no necessity of providing a magnetic flux sensor in the vicinity of a supporting electromagnet and no necessity of increasing the number of signal lines in a cable and capable of achieving an advantage similar to a conventional magnet flux feedback type power amplifier in a controller. The magnetic bearing apparatus for supporting a supported member by a magnetic force without contact comprises a current sensor (11) for detecting a control current output from a power amplifier (7) and a displacement sensor (10) for detecting a displacement of the supported member (1). ~~A control current detection signal S_i of the current sensor (11) and a displacement detection signal S_g of the displacement sensor (10) are supplied to an estimator (20) that estimates a magnetic flux or magnetic flux density generated between a surface of the electromagnet (4) and an electromagnetic target (3) on the supported member (1). An estimated value is fed back from the estimator (20) to the power amplifier (7) that supplies a control current i to an electromagnetic coil (6).~~